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Non Invasive Imaging

CORONARY CTA FOR EVALUATION OF CORONARY PLAQUE AND STENOSIS IN PATIENTS WITH A HISTORY OF KAWASAKI DISEASE

Poster Contributions
Hall C
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Background: The follow up of Kawasaki disease is based on the presence and size of coronary aneurysm. There is limited information regarding the use of coronary CT angiography (CCTA) for lesion severity and plaque characterization in these patients.

Methods: All CCTA studies performed at a single institution for Kawasaki disease were retrospectively reviewed (4/2007 - 12/2012). A CCTA was ordered by the referring cardiologist based on high risk clinical history or as a substitute for invasive angiography. An experienced reader evaluated the first 4 cm of each vessel for stenosis and plaque type by visual estimate and by an automated software analysis tool. Lesion severity was graded as mild, moderate, severe, or occlusion. Plaque was divided into non calcified, calcified, and mixed plaque based on attenuation. Radiation dose is estimated by scan dose length product (DLP) and age adjusted millisievert (mSv). Stress imaging tests and echocardiograms were reviewed. Results are described as median and interquartile range.

Results: 28 patients underwent CCTA at a median age of 13 years (6.5, 13), a median of 9.4(1, 12.7) years after diagnosis of Kawasaki disease. One patient was symptomatic. The median CCTA DLP was 65 (38, 148) and age adjusted dose was 1 mSv (0.5, 2.0). 20/28 patients (71%) had one or more diseased coronary segment. 319 segments were included in the proximal four centimeters and 72 segments (23%) had plaque (19% non-calcified, 2% calcified, and 2% mixed). 12 patients (43%) had coronary aneurysms. 8 patients (29%) had plaque without aneurysm. 7 patients (25%) had coronary stenoses (1 mild, 1 moderate, 3 severe, and 2 occlusions). In those with coronary stenoses, 4 had no aneurysm and 2 of the 4 were severe. Only one of 7 significant coronary lesions was suspected by prior evaluation with 24 of 25 prior normal stress and/or perfusion tests.

Conclusion: Patients with a history of Kawasaki disease had non-obstructive and obstructive plaque deposition with and without aneurysms. At a low radiation dose, CCTA may uniquely identify a subset of patients not otherwise suspected of coronary disease who could benefit from long-term statin therapy. The ideal patient for this test remains to be determined.